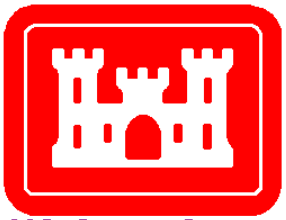
APRIL 2006

DREDGED MATERIAL MANAGEMENT AREA
CONSTRUCTION
DU-3
ATLANTIC INTRACOASTAL WATERWAY
DUVAL COUNTY, FLORIDA

FINAL ENVIRONMENTAL ASSESSMENT



US Army Corps
of Engineers
Jacksonville
District

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1.0 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

The proposed action consists of Phases I and II of the construction of DU-3, an upland dredged material management area serving Reach III (as defined in Taylor and McFetridge, 1986) of the Northeast Florida portion of the Atlantic Intracoastal Waterway (AIWW) in Duval County. Reach III extends from AIWW mile 11.76 southward to mile 17.95. The purpose of the project is to create a long-term upland dredged material management facility that would provide adequate capacity for 50 years of maintenance material dredged from the adjacent AIWW. Maintenance dredging in the AIWW has been constrained by a lack of suitable sites to place dredged material. Existing easements for dredged material management are largely unusable because they are located in wetlands or their upland areas are too small for efficient dredged material management. As the demand for residential and commercial property along the waterway increases, upland sites suitable for dredged material management are becoming scarce. Therefore, long-term dredged material management facilities must be constructed so that the federal channel can be maintained at its authorized depth.

1.2 Authority

The AIWW channel from Norfolk, Virginia, to the St. Johns River, Florida, was originally authorized March 4, 1913 by House Document 898, 62nd Congress, 2nd Session. The present channel configuration (12 x 90-150 ft) was authorized by House Document 618, 75th Congress, 3nd Session. The U.S. Army Corps of Engineers is responsible for maintenance of the channel and the Florida Inland Navigation District (FIND) serves as the local sponsor for that portion of the AIWW located in the State of Florida.

1.3 Decision to be Made

The decision to be made is whether to construct a dredged material management facility for Reach III of the AIWW in Duval County, Florida.

1.4 Relevant Issues

The following issues are relevant to the decision:

- wetlands
- biological resources
- essential fish habitat
- gopher tortoise
- threatened and endangered species
- migratory birds
- cultural, historical, and archaeological resources
- navigation
- socioeconomics
- aesthetics
- air quality

- hazardous, toxic, and radioactive materials

1.5 Methodology

In 1986, the FIND initiated a long-range dredged material management program to provide a permanent infrastructure of management facilities for all maintenance material dredged from the AIWW and the ICWW in Florida. In support of this program, Taylor Engineering, Inc., under contract to the FIND, has prepared a dredged material management plan for the AIWW in Northeast Florida. The management program consists of a systematic plan comprising the following elements:

- Review of all available dredging records, channel surveys, existing FIND dredged material easements, and pertinent sediment data;

- Establishment of operational channel reaches and corresponding 50-yr maintenance dredging and material storage/management requirements;

- Determination of operational reach deficits in existing material storage capacity;

- Evaluation of dredged material management alternatives and definition of the dredged material management concept most appropriate for each reach;

- Identification, where appropriate, of candidate upland sites for evaluation as dredged material management areas;

- Evaluation of suitable existing easements and candidate sites for development as dredged material management areas using a standard set of engineering, environmental, and socioeconomic criteria; and

- Establishment of a site bank of primary (first-choice) and secondary (second-choice) dredged material management alternatives for each reach.

The Northeast Florida plan, covering Nassau, Duval, and a small part of St. Johns Counties, is described in the *Long-range Dredged Material Management Plan for the Intracoastal Waterway in Northeast Florida* (Taylor and McFetridge, 1986) and an accompanying engineering plan book. An interdisciplinary team of engineers and environmental scientists using the systematic process outlined above prepared the plan. The evaluation of alternatives described in the above documents (reviewed in Sections 2.1 — 2.4) resulted in the selection of DU-2 and DU-3 as the primary dredged material management areas (DMMA) for Reach III.

1.6 Permits Required

The proposed construction would impact less than half an acre of isolated state jurisdictional wetlands (de minimis impact), therefore, it is anticipated that a state Water Quality Certification/Environmental Resource Permit would be required with no wetland mitigation (per F.A.C. 40C-4.041). Permits to burn the cleared vegetation would be obtained from the appropriate

local governments by the Contractor if he so chooses.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 Introduction

Several dredged material management alternatives were considered for the Northeast Florida portion of the AIWW. The alternatives were evaluated in the context of a long-term dredged material management strategy intended to resolve the recurring conflicts between the engineering and operational requirements of channel maintenance and the environmental and land-use constraints imposed on dredged material placement and storage. Evaluation of alternative management strategies led to the adoption of three primary tenets to guide the long-term management strategy. These are:

1. Future dredged material management will be confined to upland areas to the maximum extent possible.

2. Centralized management sites will be established for each identified channel reach. Centralized sites will reduce the total acreage required for dredged material management and will reduce the proliferation of smaller dredged material management facilities, each with its own set of outlet works and attendant water quality considerations.

3. Dredged material management sites will be operated and maintained as permanent facilities in which dredged material will be actively managed and made available for reuse.

2.2 History of Alternative Formulation

Dredged material management alternatives for the AIWW in Northeast Florida were developed as part of the FIND's long-range dredged material management program. The alternative selected for Reach III must be able to handle 1,342,310 cubic yards of maintenance dredging material, part of the projected 50-year material storage requirement. Throughout the alternative evaluation process, federal, state, and local regulatory issues were addressed through continued coordination with appropriate agencies via an interagency project advisory committee. The long-range dredged material program and alternative evaluation procedures, summarized in Section 1.5, are documented in Taylor and McFetridge (1986).

2.3 Eliminated Alternatives

The following dredged material management alternatives were considered and subsequently eliminated by the project advisory committee.

2.3.1 Ocean Disposal

Ocean disposal of dredged material requires the use of deep draft ocean barges or hopper

dredges. These vessels, because of their size, cannot operate in the relatively shallow depths of the AIWW. Therefore, ocean disposal would require multiple handling of dredged material using shallow draft vessels or pumping in combination with seagoing barges. In addition, limited ocean access within the project area would introduce significant increases in transport or pumping distances with associated increases in operational costs. Collectively, these requirements render ocean disposal impractical and prohibitively expensive.

2.3.2 Beach Placement

The sediments in the portion of the AIWW to be served by the DU-3 dredged material management facility contain fine sands and silts (Taylor and McFetridge, 1986) and are not suitable for beach placement.

2.3.3 Open Water Placement with Habitat Restoration

Open water placement in artificial dikes followed by habitat restoration was the only form of open water placement considered feasible in Northeast Florida. However, significant difficulties would accompany this alternative, including its unproven likelihood of success and the uncertainty of obtaining environmental permits and approval to use submerged state lands. Additionally, this alternative would require increasing acreages of submerged land for each dredging operation. These limitations preclude the use of this alternative as a long-term management strategy.

2.3.4 Other Upland Sites

Several alternative upland sites were evaluated as documented in Taylor and McFetridge (1986), based on the engineering, environmental, and cultural considerations listed below.

- Engineering/Operational Considerations
  - Capacity
  - Adequate dike material
  - Pumping distance
  - Pipeline access
  - Upland access
  - Soil properties

- Environmental Considerations
  - Wetland impacts
  - Upland impacts
  - Buffer zone
  - Archaeological value
  - Groundwater conditions

- Cultural/Economic Considerations
  - Minimal existing development
  - Ownership

The candidate sites evaluated for Reach III included several existing dredged material placement easements that were eliminated from consideration because they were partly submerged, too small, lacked road access, or a combination of these factors. Two existing easements were considered as a possible alternative as were four additional upland areas. From these, sites DU-2 and DU-3&4 were determined to best satisfy the evaluation criteria listed above and were thus selected as the primary dredged material management areas for Reach III, DU-2 to serve the Northern portion of Reach III and DU-3&4 to serve the Southern portion. Subsequent discovery, study, and listing of archaeological site 8DU7495 on the western portion of DU-3&4 led to redesign of the containment facility. This redesign reduced the sites capacity such that it no longer met its estimated 50-year dredged material handling requirement. Therefore, DU-3&4 (identified as site A-15.4 W-19-5, West Central Black Hammock Island, in Taylor and McFetridge, 1986) was combined with the existing adjacent and contiguous site MSA 300E (identified as site A-15.2 W-19-4, Central Black Hammock Island, in Taylor and McFetridge, 1986) to become DU-3.

2.4 Alternatives

2.4.1 No Action

Under the no action alternative, a dredged material management site would not be constructed for Reach III of the AIWW in Northeast Florida.

2.4.2 Construction of DU-3

DU-3 would be an approximately 122-acre site containing a dredged material containment basin and buffer area. Construction would occur in two phases. Phase I construction would consist of clearing and grubbing the site. Phase II would entail construction of the diked containment basin.

2.5 Alternative Comparison

Table 2.1 provides a summary comparison of the two alternatives described above, derived from the information presented in Section 4.1 and 4.2.

2.6 Preferred Alternative

Construction of DU-3 is the preferred dredged material management alternative for Reach III in Northeast Florida. Along with the built site DU-2, the DU-3 DMMA would satisfy the dredged material handling requirements for Reach III and involves minimal impacts to wetlands.

Table 2.1 Alternative Comparison

Issue	Alternative	
	No Action	DU-3
Water Quality	No Impact	No Impact; Storm water system would route to the eastern parcel and dredge effluent would be piped to IWW channel; groundwater test well system would monitor site usage and corrective action would occur should adverse impacts associated with site usage be identified
Wetlands	No Impact	Minor impacts on isolated wetlands (7.86 acres reservoirs/successional spoil communities and 0.36 acres wet prairie/mixed wetland hardwood)
Biological Resources	No Impact	Elimination of about 49.14 acres of upland communities
Essential Fish Habitat	No Impact	No Impact
Gopher Tortoise	No Impact	Minor impact to local gopher tortoise populations. Relocation of, or compensation for, tortoises found within containment cell boundaries would offset impact.
Threatened and Endangered Species	No Impact	No Impact
Migratory Birds	No Impact	No impact; Jacksonville COE migratory bird protection policy would be followed
Cultural, Historic, and Archaeological Resources	No Impact	No Impact, containment basin was redesigned to avoid documented site 8DU7495
Navigation	Significant long-term reduction in navigability of AIWW	Significant long-term benefit from maintenance of AIWW
Socioeconomics	Long-term adverse impact to water-related businesses as navigability of AIWW is reduced	Minor short-term stimulus for local businesses during construction; long-term benefit to water-related businesses
Aesthetics	No Impact	Minor impact during construction
Air Quality	No Impact	Short-term impact during burning of cleared vegetation; no significant long-term impact
Hazardous, Toxic, and Radioactive Waste	No Impact	No HTRW items have been identified within the boundaries of the site. Therefore, there would be no impact

3.0 AFFECTED ENVIRONMENT

3.1 General

Dredged material management area DU-3 would be a 122-acre parcel located on the central part of Black Hammock Island in Duval County, Florida. DU-3 is on the west side of Sawpit Road, three-quarters of a mile north of Cedar Point Road. The site is vegetated by relatively undisturbed pine flatwoods, scrub, temperate hardwoods, depressional wetland communities and a disturbed existing dredged material containment basin with numerous successional vegetation communities (Mosura, 2002). FIND owns a 19.7-acre parcel east of Sawpit Road, which contains part of the pipeline easement and is comprised of pine flatwoods and coastal scrub. The pipeline easement extends from the IWW channel, through 1,850 feet of National Park Service (NPS) owned salt marsh and 1,250 feet of the eastern parcel, under Sawpit Road and into DU-3. Mosura's 2002 environmental characterization of DU-3 (Appendix I) includes descriptions and maps of land cover and vegetative communities, characterization of wildlife communities, and discussion of isolated wetlands. The NPS has ownership of parcels north and east of DU-3.

3.2 Water Quality

Site DU-3 is located within the boundaries of the Nassau River-St. Johns River Marshes Aquatic Preserve and is immediately East of the Pumpkin Hill Creek State Park. The Nassau River-St. Johns River Marshes Aquatic Preserve comprises both estuarine and marine waters of exceptional biological and aesthetic value to the state. This aquatic preserve is a unique Florida representative of the "Sea Islands" usually associated with southern Georgia. A chain of sandy barrier islands, occasional inlets, and a combination of sounds, rivers, and extensive coastal marshland characterize these. The preserve area consists of vast salt marsh estuary with numerous interconnecting tidal creeks, and channels as well as minor uplands (tree islands). The aquatic preserve was designated on November 24, 1969 for the primary purpose of preserving the biological resources of the Nassau Sound area marshes and associated waters (http://www.dep.state.fl.us/coastal/sites/nassau/info.htm). The DEP classifies the waters of the aquatic preserve as Class II – suitable for recreation and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife.

Between April 29, 2004 and May 26, 2004, Taylor Engineering, Inc. delineated wetland boundaries within the DU-3 property and pipeline easement by following the USACE wetland delineation routine method from the 1987 USACE Wetlands Delineation Manual. Wetlands and other vegetative communities were classified according to Level III of the *Florida Land Use, Cover and Forms Classification System* (FDOT, 1985). The Taylor wetland delineation report is located in Appendix III. A reservoir of less than 10 ac/spoil areas is located within the basin of MSA 300E and is surrounded by two successional vegetation communities, a freshwater marsh/spoil community and a willow and elderberry/spoil community. The total acreage of these wetland communities is 7.86 acres. These wetlands are highly disturbed and are a direct result of the construction and use of the MSA 300E containment basin during the 1982 dredging of the AIWW. A 0.36 acre isolated emergent wetland classified as wet prairie/mixed wetland hardwood is located Southwest of the MSA 300E basin. Salt marsh, 2.56 acres, is present in the pipeline

easement on the Eastern part of the site (Figure 5, Appendix III). The salt marsh falls under the jurisdiction of the Florida Department of Environmental Protection (FDEP).

3.3 Biological Resources

DU-3 contains ten upland vegetative communities — palmetto prairie/sand live oak (3.54 acres), coastal scrub/sand live oak (20.74 acres), other shrub and brush/spoil areas (3.72 acres), pine flatwoods (6.36 acres), pine flatwoods/sand live oak (1.28 acres), pine-mesic oak (1.10 acres), temperate hardwood (21.30 acres), sand live oak (6.96 acres), pine-mesic oak/spoil areas (16.85 acres), and spoil areas (9.70 acres). Six wetland communities — reservoirs less than 10 acres/spoil areas (4.90 acres), mixed wetland hardwood (0.57 acres), willow and elderberry/spoil areas (2.08 acres), freshwater marsh/spoil areas (1.43 acres), salt marsh (1.96 acres), wet prairie/mixed wetland hardwood (0.36 acres) — are also present on the site. The composition and locations of these communities are described in Mosura (2001). Additionally, the pipeline easement to the site includes saltwater marsh (2.56 acres)(Taylor, 2004).

The upland forests dominating the site provide moderate to good wildlife habitat. The vegetation provides adequate cover, nesting sites, and food for birds and small mammals. Berry-producing vines are abundant. Probable inhabitants of the forests include opossum, gray squirrel, raccoon, armadillo, various rodents, and deer. Birds observed or likely inhabitants of the site include cardinal, chickadee, Carolina wren, vireos, warblers, ruby-crowned kinglet, robin, and cedar waxwing. One gopher tortoise in the scrub habitat was the only herpetofauna observed during site investigations. However, other likely inhabitants include a variety of toads, frogs, skinks, anoles, and snakes.

The isolated wetlands offer an important reproductive habitat for amphibians. Other animals that probably use these wetland habitats include snakes, wading birds, marsh rabbits, and rice rats. Finally, raccoon, otter, mink, rabbits, and rice rats, as well as many varieties of birds probably utilize the salt marsh.

3.4 Essential Fish Habitat

Species managed under the Magnuson-Stevens Fishery Conservation and Management Act (PL 94-265) within the project area include, but are not limited to, postlarval and juvenile penaeid shrimp (*Penaeus sp.*), and juvenile red drum (*Sciaenops ocellatus*) and snapper (*Lutjanus sp.*). These species and their food organisms use the IWW channel as a travel corridor to reach nursery or staging areas possibly including the onsite salt marsh and tidal flat habitat.

The area in the vicinity of DU-3 contains the following inshore/estuarine habitats designated as Essential Fish Habitat (EFH):

- Estuarine Emergent Marsh. Estuarine emergent marshes are complex ecosystems that serve as EFH. Estuarine emergent marsh provides vital life requisites to wildlife including endangered and threatened species, furbearers, waterfowl, wading birds, shore and other birds, reptiles and amphibians, shellfish and invertebrates (SAFMC 1998).

- Estuarine Water Column. This habitat typically contains four salinity regimes: Oligohaline (<8 ppt), mesohaline (8-18 ppt), polyhaline (18-30 ppt), and euhaline (>30 ppt) water around inlets. These saline environments have moving boundaries that are generally maintained by seawater transported through inlets by tide and wind mixing with fresh water from land runoff. Both the horizontal and vertical salinity gradients in these areas strongly influence the distribution of biota (SAFMC 1998).

3.5 Gopher Tortoise

Taylor Engineering, Inc., under contract to the Corps, conducted a gopher tortoise survey of site DU-3 (Appendix II). DU-3 contains 3.72 acres of "valuable" gopher tortoise habitat, approximately 27 acres of "less significant" habitat, and supports an estimated population of six tortoises. All gopher tortoise burrows located onsite were within the existing 300E containment basin in the northern part of the site.

3.6 Threatened and Endangered Species

The following species listed as candidate (C), threatened (T) or endangered (E) by the U.S. Fish and Wildlife Service (USFWS) pursuant to the Endangered Species Act are known to inhabit Duval County and could possibly be located in the project area:

Bald eagle……*Haliaeetus leucocephalus* (T)
Eastern indigo snake……*Drymarchon corais couperi* (T)
Piping plover……*Charadrius melodus* (T)
Red-cockaded Woodpecker…… *Picoides borealis* (E)
Wood stork……*Mycteria americana* (E)
Source:(http://northflorida.fws.gov/CountyList/Duval.htm)

3.7 Migratory Birds

Present land cover at DU-3 provides favorable nesting and foraging habitat for migratory birds. Large numbers of wading birds utilize the shorelines of the basin for foraging (Mosura 2002). Least terns and black-necked stilts are known to nest in the sandy dredged material deposits around the basin. Over 179 species of birds are known from the site based on information provided by a local birder (Clark, 1987).

3.8 Cultural, Historical, and Archaeological Resources

Legislation introduced by Congressman Charles Bennet established the Timucuan Ecological & Historic Preserve on February 16, 1988. The National Park Service (NPS) has the responsibility for resource management within the preserve. The majority of the 46,000 acre Duval County preserve is comprised of St. Johns River wetlands. The NPS envisions a dynamic natural/cultural park system where the visitor would experience, via land and water resources, a better understanding of the ecology of wetlands and their past and present human use. The NPS desires to protect, preserve, and/or interpret the cultural, ecological, and recreational resources of the St. Johns and Nassau rivers and estuarine systems within the preserve. DMMA site DU-3 is

located east of the Pumpkin Hill Creek Preserve State Park and within the Timucuan Ecological & Historic Preserve.

An archival and literature review, including a review of the current National Register of Historic Places listing and consultation with the Florida State Historic Preservation Office, was conducted to determine if significant cultural resources are present in the project area. This search revealed that the 8DU7495 archeological site had been previously identified on the southwestern area of the site.

3.9 Navigation

The major navigation activity on the AIWW is recreational. Commercial craft on the waterway include barges, fishing vessels, and excursion boats. Several types of government vessels also use the AIWW.

3.10 Socioeconomics

The area surrounding the proposed DU-3 consists of low-density residential and commercial development, and is largely under the control of Federal and State governmental agencies (NPS/DEP/SJRWMD) and private landowners. It is expected future economic growth in the project area will be based upon residential and agricultural development.

3.11 Aesthetics

The DU-3 site is bordered to the west by the marshes of the Timucuan Preserve, the Pumpkin Hill Creek Preserve State Park, and the Nassau-St. Johns River Marshes State Aquatic Preserve. The lands to the east and north consist of low-density residential housing and NPS lands while a commercial landscaping and nursery operation lies immediately to the south. The wetlands, coastal scrub, sand live oak, temperate hardwood forest and mature pine flatwoods lend themselves to acting as an efficient visual screen from the surrounding lands. The exception is the previously constructed MSA 300E in the northern part of the site provides little or no separation between the dike and adjacent properties. Vegetation in this area is classified as pine-mesic oak/spoil areas and the white sand dike is visible through the fence and sparse vegetation along Sawpit road. Otherwise the overall aesthetics of the site would be considered good.

3.12 Air Quality

No significant sources of air pollution are located on or immediately adjacent to the site.

3.13 Hazardous, Toxic, and Radioactive Wastes

No evidence of hazardous, toxic, or radioactive wastes was noted on DU-3 during site visits. Taylor Engineering, Inc conducted a Phase 1 environmental site assessment. As a result of this assessment, it was determined that present and past activities have not introduced significant amounts of hazardous substances or petroleum products on DU-3 (Taylor, 2002).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 No Action

4.1.1 General

Under the no action alternative, a dredged material management site would not be constructed for Reach III of the AIWW in Northeast Florida.

4.1.2 Water Quality

There would be no effect on water quality on the proposed construction site from the no action alternative.

4.1.3 Biological Resources

There would be no impact on biological resources.

4.1.4 Essential Fish Habitat

There would be no impact on essential fish habitat.

4.1.5 Gopher Tortoise

There would be no impact on gopher tortoises.

4.1.6 Threatened and Endangered Species

There would be no impact on threatened and endangered species.

4.1.7 Migratory Birds

There would be no impact on migratory birds.

4.1.8 Cultural, Historical, and Archaeological Resources

There would be no impact on Archaeological or historical resources.

4.1.9 Navigation

No action would result in failure to construct a long-term dredged material management site for Reach III of the AIWW in Northeast Florida. Maintenance dredging in the AIWW would be delayed or curtailed due to a lack of suitable sites to place maintenance material. Depths in the AIWW would gradually reduce and impede navigation.

4.1.10 Socioeconomics

Long-term adverse impact to water-related businesses would occur as the navigability of the AIWW decreases.

4.1.11 Aesthetics

There would be no change in aesthetics.

4.1.12 Air Quality

There would be no change in air quality.

4.1.13 Hazardous, Toxic, and Radioactive Waste

There would be no change in hazardous, toxic, or radioactive materials on the property.

4.1.14 Unavoidable Adverse Impacts

Navigation in the AIWW would be impeded due to the delay or cessation of maintenance dredging. Resuspended sediments in the waterway would contribute to a decline in water quality.

4.1.15 Irreversible and Irretrievable Commitments of Resources

There would be no commitment of significant irreversible and irretrievable resources for this alternative.

4.2 CONSTRUCTION OF DU-3

4.2.1 General

DU-3 would serve as an upland dredged material management area serving Reach III (as defined in Taylor and McFetridge, 1986) of the Northeast Florida portion of the AIWW. Approximately 44.94 acres of the total 102.98-acre DU-3 dredged material management facility would be preserved as a buffer area surrounding the containment basin. The containment basin (to the outside toe of the dike) would occupy 58.04 acres. Thus, the containment area would encompass about 56% of DU-3 while 44% of the site would remain as a natural buffer. The containment basin would be formed by a dike with a crest elevation of 19.0 ft (+31.85 ft NGVD) above the existing mean site elevation. The dike would have a crest width of 12 ft and side slopes of 1V:3H. Material for dike construction would be obtained by excavating the interior of the containment basin to +6.95 ft NGVD (5.9 ft below existing mean grade).

The stability of the containment dike against erosion from rainfall runoff and wind would be maintained by vegetating the dike slopes and crest with native grasses immediately following dike construction. The grasses would quickly form soil-binding mats while not rooting so deeply so as to structurally weaken the dike. An additional benefit of vegetating the dikes in this manner is the reduction of the visual impact of the containment basin. The configuration of the containment

basin would provide a 100-825 ft wide buffer separating the containment basin from the site boundaries. This buffer would isolate the containment basin from development. Most of the buffer would remain undisturbed with existing vegetation left in place.

4.2.2 Water Quality

Approximately 2.56 acres of salt marsh in the pipeline easement are connected to waters of the state and are therefore subject to the review and permitting authority of the FDEP. However, any salt marsh impacts would be from the temporary placement (90d) of the influent and effluent pipelines during dredging events (every 15 yrs) and would be considered minor. The containment basin and access road would be configured such that only 0.36 acres of isolated wet prairie/mixed wetland hardwood and 7.86 acres of reservoir/successional vegetation community would be within the construction area. The remaining FDEP jurisdictional wetlands would be within the buffer area. Since the 8.22 acres of impacted wetlands are isolated and highly disturbed and impacts to the salt marsh along the pipeline easement would be temporary, it is anticipated that no mitigation would be required.

The design features and facility operations would ensure that discharge from the containment basin during dredging operations meets state Class III water quality standards for turbidity and other parameters. This dredge return water would be pumped via pipeline back to the IWW channel. The facility design and management plans also contain provisions to control storm water runoff between dredging operations. The containment basin would include an interior retention area of sufficient capacity to retain the first inch of storm water runoff. The site operator would gradually release any ponded storm water through the weir system. Storm water would be conveyed to the mean high water line of the adjacent marsh east of Sawpit road via culvert. Construction details of the culvert would be determined during final design. Retention and gradual release of storm water would serve to minimize turbidity and to simulate natural discharge patterns following rainfall. Although these design features should prevent impacts to wetlands in the buffer, the site management plan includes provisions to monitor the status of these wetlands. An environmental survey (Appendix I) of the site establishes baseline habitat and vegetation conditions as they relate to the wetlands. Periodic re-surveys would continue throughout the service life of the site. Degradation of the wetlands related to the interruption of natural drainage patterns, groundwater impacts, or other possible consequences of site construction or operations would be noted, corrective actions taken, and guidelines developed to minimize further adverse impact (Taylor 2002).

4.2.3 Biological Resources

All vegetation would be removed from the containment area and access road. This would include about 49.1 acres of upland communities and 8.22 acres of isolated wetland communities. During site clearing, most motile wildlife would relocate to adjacent vegetated habitats. Clearing and wildlife relocation would lower the biological productivity of the site during Phase I construction. Wildlife not moving would likely be extirpated during construction. During the lag time between Phases I and II, pioneer species of plants would colonize the area followed by small mammals, birds, and reptiles.

4.2.4 Essential Fish Habitat

Essential Fish Habitat (EFH) coordination with the National Marine Fisheries Service (NMFS) was initiated during the public notice process. No EFH would be within the construction area, however, 2.56 acres of salt marsh would be temporarily disturbed from the placement of the influent and effluent pipelines during dredging events (90d every 15 yrs). This temporary disturbance would be considered minor, as salt marsh vegetation would quickly recolonize any disturbed areas. No cumulative or secondary impacts to EFH are anticipated due to site design and dredging schedule. However, as described in section 4.2.2 above, monitoring of the adjacent marsh systems would occur throughout the service life of the site. Furthermore, degradation of the wetlands related to the interruption of natural drainage patterns, groundwater impacts, or other possible consequences of site construction or operations would be noted, corrective actions taken, and guidelines developed to minimize further adverse impact (Taylor 2002). Therefore, the Corps believes the proposed action would not have substantial adverse impacts on EFH or Federally managed fisheries along the eastern coast of Florida. The National Marine Fisheries Service responded to the 1992 public notice and indicated that there were no comments to provide regarding the proposed work. No written response was received from the NMFS regarding the 2004 public notice and EFH coordination is complete.

4.2.5 *Gopher Tortoise*

Construction of DU-3 would impact the gopher tortoise population located onsite because all burrows except one abandoned burrow are located within the proposed containment basin footprint. Sufficient habitat may be available within the sites buffer to support the existing population such that relocation to the buffer would be possible. The FIND would be responsible for obtaining either a relocation permit or an incidental take permit to compensate for the impacts to the onsite gopher tortoise population from construction of DMMA DU-3.

4.2.6 Threatened and Endangered Species

Construction of DU-3 would not impact wildlife species listed by the U.S. Fish and Wildlife Service (USFWS). This determination has been coordinated with the USFWS (Appendix IV).

4.2.7 Migratory Birds

Dredged material management sites are generally viewed as desirable nesting habitat by migratory birds such as terns, laughing gulls, and plovers. Present land cover on DU-3 provides favorable nesting habitat for these species. However, no impacts on migratory birds would be anticipated during Phase I (clearing and grubbing) or Phase II (dike construction) because these activities would follow the Jacksonville District Corps of Engineers district-wide migratory bird protection policy (COE, 1993), a summary of which is given below.

The purpose of the migratory bird protection policy is to "provide protection to nesting migratory bird species that commonly use the dredged material disposal sites within Jacksonville District while facilitating disposal of dredged material to meet the Federal standard for navigation

channel and harbor maintenance as authorized by Congress" (pg. 1). The migratory bird protection policy includes the following alternatives to prevent impacts to nesting birds — avoidance, creation of undesirable habitat, dissuasion through noise or activity, or creation of alternative nesting sites. A final alternative, incidental take, is undesirable and would not be considered unless an emergency situation arose. Should construction occur during nesting season (April 1 to September 1), the site protection plan presented in Appendix I of the migratory bird protection policy (COE, 1993) would be implemented. The site protection plan provides for education of contractor personnel, daily monitoring for nesting activity, steps to deter nesting in the construction area, avoidance of nests that may be present and, if necessary to protect nesting birds, cessation of construction activities.

It is anticipated that post construction usage of the site by migratory birds would increase from historic levels at MSA 300E as favorable nesting area will be increased through containment basin construction. Therefore, a net benefit to migratory bird nesting and foraging habitat may result from DMMA construction.

4.2.8 Cultural, Historical, and Archaeological Resources

During consultation, the Florida Department of State recommended that a Phase II archaeological survey of the dredged material management area be conducted before site construction. Based on the results of this survey, it was determined that the Turner-McGill Middens archaeological site (8DU7495) was eligible for listing in the *National Register of Historic Places*. The site footprint was then revised in order to buffer and avoid 8DU7495. Subsequently, the Florida Department of State concurred with the Corps determination that the construction of DMMA DU-3 would have no effect on any sites listed, or eligible for listing, in the National Register.

The National Park Service Timucuan Ecological and Historic Preserve requested cooperating agency status for the preparation of the EA. Through coordination with the landowner (FIND) the NPS is negotiating access rights for use of the saltmarsh pipeline route through NPS property. In exchange, the NPS would be granted an easement through DU-3 along the western boundary for a recreational trail corridor. The NPS would consult with SHPO prior to trail construction. As stated in sections 4.2.2, no adverse impacts to adjacent NPS lands are anticipated from construction and use of DU-3. The extensive groundwater and habitat monitoring plan detailed in Taylor's 2002 management plan (Taylor 2002) would insure that monitoring for adverse effects from use of the DMMA would occur and corrective actions would be undertaken should impacts occur.

4.2.9 Navigation

Construction of the DU-3 dredged material management facility would have long-term benefits to navigation on the AIWW by facilitating maintenance dredging.

4.2.10 Socioeconomics

There would be a short-term stimulus to the local economy from the contracting of equipment and labor and the sale of goods and services (fuel, food, lodging) in support of the construction. There would be a long-term benefit to water-related businesses through continued maintenance of the AIWW. No significant social activities would be altered by the construction of DU-3.

4.2.11 Aesthetics

Site construction activities would have a temporary, adverse impact on the aesthetic resources of the site. A minor, temporary increase in noise could be expected during construction. Following construction, however, the dredged material management area would be inactive except during dredging that is projected to take place at fifteen-year intervals. There would be no significant long-term increase in noise.

The containment basin dikes would be low-profile dikes with a crest elevation of 19ft (+31.85 ft NGVD) above the existing mean site elevation and would be planted with native grasses to further reduce their visual impact. As described in Section 4.2.1, the containment basin would be separated from neighboring properties by a 100-825 ft wide buffer. The buffer would occupy about 45.0 acres (44%) of the 102.98 acre site. Existing vegetation in the buffer would be left in place to screen the dikes from sight. Pine mesic oak, pine flatwoods and coastal scrub/sand live oak communities are the dominant vegetative communities in the buffer. If necessary, additional vegetation would be planted in the buffer to achieve desired screening. Thus, the site, when viewed from neighboring properties to the south, would appear similar to its pre-construction condition. Therefore, no significant permanent disruption of aesthetic value would be expected.

4.2.12 Air Quality

In the short term, smoke and particulates could increase if burning is used to dispose of cleared vegetation. Burn permits would be required from the appropriate governmental agencies. Should state standards be such that burning cannot be accomplished on site, then the cleared materials would be removed from the site and disposed of properly. Minor amounts of dust could be generated during site construction. However, the infrequent use of the site (once every fifteen years), the maintenance of vegetative cover on the dikes, and the presence of the buffer would ensure minimal long-term dust generation. No significant long-term impacts on air quality would be expected.

4.2.13 Hazardous, Toxic, and Radioactive Wastes

Small quantities of equipment fuels or lubricants could spill or leak during construction. However, no significant quantities of hazardous, toxic, or radioactive waste would be released. Sediments would be tested prior to dredging to ensure that material placed in the facility contains no significant hazardous, toxic, or radioactive wastes. Taylor Engineering, Inc conducted a Phase 1 environmental site assessment (Appendix IX). As a result of this assessment, it was determined that

present and past activities have not introduced significant amounts of hazardous substances or petroleum products on DU-3.

4.2.14 Unavoidable Adverse Impacts

No significant adverse impacts have been identified. Minor impacts would include long-term loss of wildlife habitat, short-term reduction in air quality from burning cleared vegetation, and loss of 8.22 acres of isolated and manmade wetlands.

4.2.15 Irreversible and Irretrievable Commitments of Resources

There would be no commitment of significant irreversible and irretrievable resources for this work.

5.00 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

5.1 Environmental Policy Act (NEPA) of 1969, as amended. Environmental information on the project has been compiled and the Environmental Assessment is available for review by the public in compliance with Regulation 33 CFR Parts 335-338. These regulations govern the Operations and Maintenance of U.S. Army Corps of Engineers Civil Works Projects involving the Discharge of Dredged or Fill Materials into Waters of the US or Ocean Waters. Public Notice Number PN-CO-IWW-167 dated 14 April 1992 was issued soliciting comments from all interested parties. In addition, a second public notice PN-CO-IWW-273 was issued dated 23 November 2004. Information and issues received from these responses are used in the preparation of the environmental assessment. This public coordination and environmental impact assessment complies with the intent of the NEPA.

5.2 Endangered Species Act of 1973, as amended. Consultation with the USFWS was initiated by letter dated November 2, 1994 and completed on October 23, 1995. It was determined that the proposed construction project would have "No Effect" on threatened or endangered species that could be within the dredged material management area or along the pipeline easement.

5.3 Fish and Wildlife Coordination Act of 1958, as amended. The project has been coordinated with the USFWS. All activities within the proposed disposal site would be in compliance with this Act.

5.4 National Historic Preservation Act of 1966, as amended (PL 93-291). A documented archeological site, 8DU7495, is located within the project area. The Corps has coordinated with the State Historic Preservation Officer and, in order to avoid possible adverse effects upon this documented resource, the containment basin was redesigned to avoid it.

5.5 Clean Water Act of 1972, as amended.

5.5.1 Section 401. A Water quality certification would be obtained for this project. An Environmental Resource Permit application will be submitted to the Florida Department of Environmental Protection. The issued permit would constitute water quality certification in

compliance with Section 401.

5.6 Clean Air Act of 1972, as amended. No air quality permits will be required for this project. Therefore, this Act would not be applicable.

5.7 Coastal Zone Management Act of 1972, as amended. This project was reviewed and coordinated with the State of Florida to ensure compliance with the Coastal Zone Management Program (Appendix VI).

5.8 Farmland Protection Policy Act of 1981. No prime or unique farmland occurs within the boundaries of the proposed dredged material management area, nor is any proposed for impact along the pipeline route. Therefore, this Act would not be applicable.

5.9 Wild and Scenic River Act of 1968, as amended. There are no designated Wild or Scenic Rivers within the project area. Therefore, this Act is not applicable.

5.10 Marine Mammal Protection Act of 1972, as amended. The work was coordinated with the USFWS during Section 7 Consultation pursuant to the Endangered Species Act. The West Indian manatee (*Trichechus manatus*) could be located in the area of the pipeline easement. Standard manatee protection guidelines, developed by the State of Florida, will be required during maintenance dredging operations.

5.11 Estuary Protection Act of 1968. Although related actions occur within the IWW, there should be no significant deleterious effects as a result of the proposed action.

5.12 Federal Water Project Recreation Act of 1976, as amended. There is a potential for increased recreational opportunities within the IWW as a result of maintenance dredging operations associated with the proposed action, or at least an enhancement of these opportunities.

5.13 Magnuson-Stevens Fishery Conservation and Management Act of 1996. The proposed action would not have any significant deleterious effects upon fisheries adjacent to the project site or along the proposed pipeline route. Coordination with the National Marine Fisheries Service (NMFS) in accordance with the Essential Fish Habitat (EFH) provision of the Act was initiated during the public notice process. Due to the temporary nature of the impacts, no significant impacts are anticipated. The National Marine Fisheries Service had no comments to the public notice and EFH coordination is complete.

5.14 Submerged Lands Act of 1953. The pipeline route associated with the proposed action would occur (in part) on submerged lands of the State of Florida. The project will be coordinated with the State of Florida and is in compliance with the Act.

5.15 Coastal Barrier Resources Act and Coastal Barrier Improvement Act of 1990. There are no designated coastal barrier resources in the project area that would be affected by this project. These Acts are not applicable.

5.16 Rivers and Harbors Act of 1899. The proposed action would not obstruct navigable waters

of the United States. The proposed action has been subject to the public notice, public hearing, and other evaluations normally conducted for activities subject to the Act. The project is in full compliance.

5.17 Anadromous Fish Conservation Act. The proposed action should not have any significant deleterious effects upon anadromous fish populations adjacent to the project site or along the proposed pipeline route. The project was coordinated with the NMFS and is in compliance with the Act.

5.18 Migratory Bird Treaty Act and Migratory Bird Conservation Act. Migratory birds are not anticipated to be affected by the proposed action. A migratory bird protection program would be implemented to avoid nesting areas during the 1 April to 31 August nesting season. The proposed action will be in compliance with these Acts.

5.19 Marine Protection, Research and Sanctuaries Act. This Act is not applicable to the construction of an upland dredged material management area.

5.20 Executive Order 11990, Protection of Wetlands. Only previously impacted and manmade isolated wetlands will be affected by the proposed action. Avoidance and minimization of impacts to jurisdictional wetlands were considered in the evaluation of the proposed action, and no mitigation for unavoidable impacts will be required.

5.21 Executive Order 11988, Floodplain Management. The project is within the base floodplain (100-year storm) and has been evaluated in accordance with this Executive Order. The project would not directly effect and indirectly encourage development of the floodplain. Therefore, this project is in compliance with the goals of this Executive Order.

5.22 Executive Order 12898, Environmental Justice. The purpose of the proposed action is to provide a suitable site for dredged material placement associated with the 50-year maintenance of the IWW. This action will provide increased safety, efficiency, and lower costs for navigation. The proposed activity would not (a) exclude persons from participation in, (b) deny persons the benefit of, or (c) subject persons to discrimination because of their race, color, or national origin.

6.0 COORDINATION WITH OTHERS

The site selection process has been coordinated with state and federal agencies through the work of an interagency advisory committee (Taylor and McFetridge, 1986). Public Notice Number PN-CO-IWW-267 dated April 14, 1992 was issued soliciting comments from all interested parties. Subsequently, the site layout was revised in order to avoid archaeological site 8DU7495 per comments received. Due to the time lag, a second public notice PN-CO-IWW-273 was issued dated 23 November 2004. Information and issues received from these responses were used in the preparation of this environmental assessment

7.0 LIST OF PREPARERS

This EA was prepared by:

Paul M. DeMarco, Biologist, U.S. Army Corps of Engineers
Grady H. Caulk, Archaeologist, U.S. Army Corps of Engineers
Frank R. Morrison, Engineer, U.S. Army Corps of Engineers

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APPENDIX I

ENVIRONMENTAL SITE DOCUMENTATION

APPENDIX II

GOPHER TORTOISE SURVEY REPORT

APPENDIX III

WETLAND DELINEATION REPORT

APPENDIX IV
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COORDINATION

APPENDIX VI

FLORIDA COASTAL ZONE MANAGEMENT CONSISTENCY DETERMINATION

FLORIDA COASTAL ZONE MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES

1. Chapter 161, Beach and Shore Preservation

The intent of the coastal construction permit program established by this chapter is to regulate construction projects which are located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The proposed work would not occur seaward of the mean high water line and would not significantly affect shorelines or shoreline processes. Therefore, this chapter is not applicable.

2. Chapters 186 and 187, State and Regional Planning

These chapters establish the State Comprehensive Plan that sets goals that articulate a strategic vision of the state's future. The plan's purpose is to define, in a broad sense, goals and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic, and physical growth.

Response: The proposed work was coordinated with state agencies and local governments during the public notice process and was found to be in compliance with this chapter.

3. Chapter 252, Disaster Preparation, Response and Mitigation

This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The construction of the dredged material management facility would allow continued maintenance dredging in the AIWW, thus ensuring a navigable waterway that could be used in emergency situations. Therefore, this work would be consistent with the efforts of the Division of Emergency Management.

4. Chapter 253, State Lands

This chapter governs the management of submerged state lands and resources within state lands. This includes Archaeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes, and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: The proposed work is located immediately East of the Pumpkin Hill Creek State Park and within the Timucuan Ecological & Historic Preserve. However, the proposed work would not negatively affect these state lands. A documented archeological site, 8DU7495, is located within the project area. The Corps has coordinated with the State Historic Preservation Officer and, in order to

avoid possible adverse effects upon this documented resource, the containment basin was redesigned to avoid it. Therefore, no recorded archaeological or historical sites would be affected by the proposed work. Wetlands are present on the property but the containment basin configuration would impact only isolated and manmade wetlands. Therefore, the proposed work is in compliance with this chapter.

5. Chapters 253, 259, 260, and 375, Land Acquisition

These chapters authorize the state to acquire land for a variety of purposes, including conservation and protection of environmentally sensitive areas and to provide parks and recreation areas, a recreational trails system, and outdoor recreation and conservation areas.

Response: The project area is not being considered for acquisition under the above chapters.

6. Chapter 258, State Parks and Aquatic Preserves

This chapter authorizes the state to manage state parks and aquatic preserves.

Response: The proposed work is located immediately East of the Pumpkin Hill Creek Preserve State Park and the Nassau-St. Johns River Marshes State Aquatic Preserve and is within the Timucuan Ecological & Historic Preserve. However, the proposed work would not negatively affect any parks or preserves and would, therefore, be consistent with this chapter.

7. Chapter 267, Historic Preservation

This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: A documented archeological site, 8DU7495, is located within the project area. The Corps has coordinated with the State Historic Preservation Officer and, in order to avoid possible adverse effects upon this documented resource, the containment basin was redesigned to provide a 100' buffer between the outside toe of the dike and site 8DU7495.

8. Chapter 288, Economic Development and Tourism

This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: The creation of dredged material management facilities provides for maintenance dredging of the AIWW channel. The AIWW encourages recreational development and tourism. Therefore, the project would be consistent with the goals of this chapter.

9. Chapters 334 and 339, Public Transportation

This chapter authorizes the planning and development of a safe, balanced, and efficient

transportation system.

Response: Maintenance dredging of the AIWW channel would be facilitated by this project, promoting public navigation and intermodal transportation.

10. Chapter 370, Saltwater Living Resources

This chapter directs the state to preserve, manage, and protect the marine, crustacean, shell, and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and to conduct scientific and economic studies and research.

Response: The construction of the dredged material management facility would be in compliance with this act.

11. Chapter 372, Living Land and Freshwater Resources

This chapter establishes the Fish and Wildlife Conservation Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions that provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: Construction of DU-3 would eliminate 49.1 acres of upland wildlife habitat. The project was coordinated with the Florida Fish and Wildlife Conservation Commission and would comply with the goals of this chapter.

12. Chapter 373, Water Resources

This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: The proposed work does not involve water resources as described by this chapter.

13. Chapter 376, Pollutant Spill Prevention and Control

This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: The proposed work does not involve the transportation or discharging of pollutants.

14. Chapter 377, Oil and Gas Exploration and Production

This chapter authorizes the regulation of all phases of exploration, drilling, and production

of oil, gas, and other petroleum products.

Response: The proposed work does not involve the exploration, drilling, and production of oil, gas, and other petroleum products.

15. Chapter 380, Environmental Water and Land Management

This chapter establishes state land and water management policies to guide and coordinate local development decisions in order to adequately plan for Florida's future growth and development.

Response: Selection and design of the dredged material management area has been coordinated with state agencies and local governments. Therefore the project is in compliance with this chapter.

16. Chapter 388, Arthropod Control

This chapter provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: Mosquito control measures are described in the site management plan. Physical control through minimization of standing water inside the dike is the primary method of control. If necessary, short-term spraying would be coordinated through the local mosquito control authority.

17. Chapter 403, Environmental Control

This chapter authorizes the regulation of pollution of the air and waters of the state by the FDEP.

Response: Air quality impacts due to the operation of construction equipment would be minor. Burning permits would be obtained if the cleared vegetation were burned. Therefore, the proposed work would comply with the intent of this chapter.

18. Chapter 582, Soil and Water Conservation

This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both on site or in adjoining properties affected by the work. Particular attention will be given to work on or near agricultural lands.

Response: The proposed construction is located on uplands surrounded by salt marsh on one side. Existing vegetation would be preserved in the site buffer. Agricultural lands lie directly south of the site. However, no adverse effects on adjacent lands would be anticipated.

APPENDIX VII

ARCHAEOLOGICAL AND HISTORICAL RESOURCES REVIEW

APPENDIX VIII

404(b)(1) EVALUATION OF DREDGED MATERIAL

SECTION 404(b)(1) EVALUATION
DREDGED MATERIAL

I. Project Description

a. Location. Atlantic Intracoastal Waterway, Duval County, Florida.

b. General Description. The proposed construction of Dredged Material Management Area DU-3 would consist of the clearing and grubbing of the site and then the construction of a diked containment basin.

c. The AIWW channel from Norfolk, Virginia, to the St. Johns River, Florida, was originally authorized March 4, 1913 by House Document 898, 62nd Congress, 2nd Session. The present channel configuration (12 x 90-150 ft) was authorized by House Document 618, 75th Congress, 3nd Session. The U.S. Army Corps of Engineers is responsible for maintenance of the channel and the Florida Inland Navigation District (FIND) serves as the local sponsor for that portion of the AIWW located in the State of Florida.

d. General Description of Dredged or Fill Material

(1) General Characteristics of Material. The material to be utilized for dike construction is the subsoil from within the disposal area site. The material is classified as Arents, Hurricane, Ridgewood, and Leon Soils.

(2) Quantity of Material. Approximately 344,807 cubic yards of material would be required to construct the diked containment basin.

(3) Source of Material. The dike material would come from the interior of the site.

e. Description of the Proposed Discharge Site. The material would be moved using heavy earth moving equipment from the interior to the exterior of the site thus creating the diked containment basin.

(1) Size and Location. Dredged material management area DU-3 would be a 122-acre parcel located on West Central Black Hammock Island in Duval County, Florida. Black Hammock Island is on the west side of the AIWW. The containment area within the outside toe of the Dike would be 58.04 acres.

(2) Type of Site. The site would be a Dredged Material Management Area (DMMA) along the AIWW.

(3) Type of Habitat. DU-3 contains fourteen land uses / vegetative communities — palmetto prairie, coastal scrub, other shrub and brush, pine flatwoods, sand live oak, pine-mesic oak, temperate hardwoods, mixed wetland hardwood, willow elderberry, reservoirs less than 10 acres, freshwater marsh, wet prairie / mixed

wetland hardwood, saltwater marsh, and spoil areas.

(4) Timing and Duration of Discharge. Construction will be conducted during the FY06.

f. Description of Disposal Method. The diked containment basin will be formed using heavy earth moving equipment to move the fill material from the interior of the site to the exterior.

II. Factual Determinations

a. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. Current mean site elevation of DU-3 is +12.85ft NGVD and post construction mean site elevation would be +6.95ft NGVD. Proposed dike slopes of 1V:3H will provide a dike crest elevation of +31.85ft NGVD.

(2) Sediment Type. Soils at DU-3 are classified as Leon, Arents, Hurricane, and Ridgewood Soils.

(3) Dredged/Fill Material Movement. Fill material would be moved from the interior to the exterior of the site to construct the dikes. The dikes would cover 8.22 acres of manmade and isolated wetlands.

(4) Physical Effects on Benthos. NA

(5) Other Effects. NA

(6) Actions Taken to Minimize Impacts. None.

b. Water Circulation, Fluctuation and Salinity Determinations

(1) Water

(a) Salinity. No impacts to salinity at the construction site.

(b) Water Chemistry. None.

(c) Clarity. None.

(d) Color. None.

(e) Odor. None.

(f) Taste. Not applicable.

(g) Dissolved Gas Levels. NA.

(h) Nutrients. NA.

(i) Eutrophication. NA.

(2) Current Patterns and Circulation. None, access road material would be at existing grade.

(3) Normal Water Level Fluctuations. Not applicable.

(4) Salinity Gradients. Not applicable.

(5) Actions That Will Be Taken to Minimize Impacts. The disposal site will be operated to maintain state water quality standards.

c. Suspended Particulate/Turbidity Determinations

(1) Expected Changes in Suspended Particulate and Turbidity Levels in Vicinity of Disposal Sites. There will be a short-term increase in the suspended particulate/turbidity in the runoff from the construction area. Levels should not exceed state standard.

(2) Effects (degree and duration) on Chemical and Physical values

(a) Light penetration. Slight light penetration reduction will be temporarily experienced at the construction site.

(b) Dissolved Oxygen. NA

(c) Toxic Metals and Organics. NA

(d) Pathogens. Not Applicable.

(e) Aesthetics. Site vegetated buffer would shield view of diked containment basin from surrounding property so that no aesthetic impacts should occur.

(f) Others as Appropriate. None.

(3) Effects on Biota (consider environmental values in sections 230.21, as appropriate)

(a) Primary Production, Photosynthesis. Little or no impact is

expected.

(b) Suspension/Filter Feeders. Little or no impact is expected.

(c) Sight Feeders. Little or no impact is expected.

(4) Actions taken to Minimize Impacts. None.

d. Contaminant Determinations. No sources of pollution have been identified in the project area, therefore, no contaminants are expected to be encountered.

e. Aquatic Ecosystem and Organism Determinations

(1) Effects on Plankton. None.

(2) Effects on Benthos. None.

(3) Effects on Nekton. None.

(4) Effects on Aquatic Food Web. None.

(5) Effects on Special Aquatic Sites.

(a) Sanctuaries and Refuges. Although some of the surrounding areas are State aquatic preserves, no long-term negative impacts would occur.

(b) Wetlands. A portion of the wetlands would be eliminated.

(c) Mud Flats. None would be affected.

(d) Vegetated Shallows. None would be affected.

(e) Coral Reefs. Not applicable.

(f) Riffle and Pool Complexes. Not applicable.

(6) Threatened and Endangered Species. None would be affected.

(7) Other Wildlife. Loss of 49.1 acres of upland communities.

(8) Actions to Minimize Impacts. Standard Migratory bird and Gopher Tortoise measures would be followed during construction to avoid impacts to these species.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination. Not applicable.

(2) Determination of Compliance with Applicable Water Quality Standards. Surface water run-off will be controlled to meet State standards and NPDES requirements for disposal area construction.

(3) Potential Effects on Human Use Characteristic

(a) Municipal and Private Water Supply. Monitoring wells will be installed around the DMMA to ensure that saltwater contamination does not occur.

(b) Recreational and Commercial Fisheries. The construction would not impact recreational or commercial fisheries or their habitat. Consultation with NMFS was conducted and concurrence with this determination was obtained from NMFS by letter dated May 11, 1992.

(c) Water Related Recreation. Not applicable.

(d) Aesthetics. A vegetated buffer will be maintained between the dike and the surrounding properties.

(e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. The proposed DU-3 DMMA is located East of the Pumpkin Hill Creek Preserve State Park and within the Timucuan Ecological and Historic Preserve. However, no adverse impacts are anticipated to these resources as the proposed DMMA footprint was altered to avoid documented archaeological site 8DU7495.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. There would be no long-term adverse impact on the adjacent aquatic environment from the construction and use of this site.

h. Determination of Secondary Effects on the Aquatic Ecosystem. Not applicable.

APPENDIX IX

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Dredged Material Management Area DU-3&4
Duval County, Florida

May 2002

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Dredged Material Management Area DU-3&4
Duval County, Florida

Prepared for
Florida Inland Navigation District

by

Lori S. Brownell, E.I.
Tony Maguire
Darrell M. Setser, P.E.
R. Bruce Taylor, Ph.D., P.E.

Taylor Engineering, Inc.
9000 Cypress Green Drive, Suite 200
Jacksonville, Florida 32256
(904) 731-7040

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EXECUTIVE SUMMARY

Taylor Engineering, Inc., under contract to the Florida Inland Navigation District, performed a Phase I Environmental Site Assessment for dredged material management area DU-3&4 in Duval County, Florida. The purpose of this assessment was to document the environmental condition of the site with respect to the likely presence or observed presence of hazardous substances or petroleum products. Tasks for the DU-3&4 assessment included an examination of title records, topographic maps, and aerial photographs; a environmental records search; interviews with the property owner and local environmental agency staff; and a site reconnaissance.

The DU-3&4 dredged material management area, purchased by the Florida Inland Navigation District in 1988, comprises 60.03 acres located on Black Hammock Island in northeastern Duval County. Black Hammock Island, partially separated from the mainland by Pumpkin Hill Creek and its associated salt marsh system, lies immediately west of the Atlantic Intracoastal Waterway between Nassau Sound to the north and Ft. George Inlet to the south. The property, located approximately 0.75 mile north of the Cedar Point Road and Sawpit Road intersection, lies immediately south of the Florida Inland Navigation District's 62.64-acre MSA 300E site.

Identification of a 2.71-acre archeological site (State of Florida Division of Historic Resources Site 8DU7495) in the western portion of DU-3&4 resulted in a reconfiguration of DU-3&4's original site plan. The revised configuration, designed to meet the 50-year storage requirement of adjacent segments of the Atlantic Intracoastal Waterway, extends over the eastern portion of DU-3&4 and the western portion of MSA 300E. The 60-ft wide pipeline easement for DU-3&4/MSA 300E containment basin, approximately 3,400 ft in length, extends from the Waterway to the eastern portion of MSA 300E. Although the containment facility will extend over both properties, this report focuses on the environmental condition, with respect to hazardous substances and petroleum products, of DU-3&4.

Review of historical information, including aerial photographs, and the site reconnaissance show that site DU-3&4 has remained relatively undisturbed as early as 1943. Footpath trails within the central site interior and along the northern site boundary provide limited site access. Surrounding land use consists of low-density residential to the north and east and a tree nursery immediately south. A search of various federal and state agency environmental databases did not identify any mapped facilities containing hazardous substances or petroleum products within a one-mile radius of DU-3&4.

The results of this Phase I Environmental Site Assessment indicate that present and past activities have not introduced hazardous substances or petroleum products on DU-3&4. Due to the apparently limited potential for problems associated with hazardous substances or petroleum products on DU-3&4, a Phase II Environmental Site Assessment is not recommended.

As is typical, this Phase I Environmental Site Assessment was a modest preliminary investigation of existing site conditions. Notably, a Phase I Environmental Site Assessment can fail to uncover problems existing at a given location. This is especially true of underground conditions, which defy evaluation by surface observations. To the best of the authors' knowledge, this report contains factual information. Taylor Engineering limits its obligation and liabilities to fraudulent statements or gross negligence.

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1.0 INTRODUCTION

1.1 Objectives

Taylor Engineering, Inc., under contract to the Florida Inland Navigation District, performed a Phase I Environmental Site Assessment for dredged material management area DU-3&4 in Duval County, Florida. The purpose of the assessment was to document the environmental condition of the site with respect to the likely presence or observed presence of hazardous substances or petroleum products. Toward this end, Taylor Engineering assessed the condition of DU-3&4 and adjacent properties and conducted an environmental records search for contaminated properties within one mile of the site boundaries. This report documents the results of this Phase I Environmental Site Assessment, performed in general accordance with American Society for Testing and Materials (ASTM) standard E 1527.

1.2Methodology

Based on reasonably ascertainable information, a Phase I Environmental Site Assessment is a modest preliminary investigation of the environmental conditions at a given site. The DU-3&4 assessment comprised the following tasks:

- **Review present property ownership** –The title review, conducted by examining Duval County Property Appraiser records, indicated the FIND purchased DU-3&4 in 1988.

- **Review general physical setting** – General topographic information for the site and adjacent areas came from the United States Geological Survey (USGS) Mayport, FL 7.5' quadrangle map, 1992 revision. The United States Department of Agricultural Soil Survey of City of Jacksonville, Duval County, Florida (Watts, 1998) provided general information about soils and subsurface conditions. The Duval County Florida Geological Survey (Leve, 1966) provided additional information on subsurface conditions.

- **Review Past Land Use** – Aerial photographs help indicate whether activities on or adjacent to DU-3&4 suggest potential sources of contamination. Three aerial photographs (1″ = 400' scale), viewed at the Duval County Engineering Department, documented site conditions in 1943, 1952, and 1960. Imaging Technologies Services, Inc. in Jacksonville provided seven Florida Department of Transportation (FDOT)

blue-line aerial photographs at 1'' = 400' scale. These photographs documented site conditions in 1968, 1977, 1988, 1993, 1995, 1998, and 2001. In addition to the photographic review, the landowner shared his knowledge regarding recent land use and any known hazardous substances or petroleum product issues. Appendix A contains a property owner interview.

- **Review regulatory agency environmental databases** – Records within federal and state environmental databases dealing with toxic and hazardous substances or petroleum products indicate whether facilities with known environmental problems are present on or within one mile of DU-3&4. Environmental Data Resources, Inc. (EDR) provided the environmental records information for Taylor Engineering.

The records search included the federal and state ASTM standard databases listed below. The agency release date for the database follows each listed database. Appendix B provides records from ASTM standard databases and other supplemental databases including the Florida Department of Environmental Protection (FDEP) Aboveground Storage Tanks (AST), Florida Sites list (FL SITES), Dry Cleaners, and Florida Cattle Dipping Vats.

Federal Databases

- National Priorities List (NPL) – January 2002
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) – November 2001
- CERCLIS No Further Remedial Action Planned (CERC-NFRAP) – November 2001
- Corrective Action Report (CORRACTS) – November 2001
- Resource Conservation and Recovery Information System (RCRIS) – June 2000
- Emergency Response Notification System (ERNS) – August 2000

State Databases

- Florida's State-Funded Action Sites (SHWS) – November 2001
- Solid Waste Facility Database – February 2002
- Underground Storage Tanks (UST) – November 2001
- Leaking Underground Storage Tanks (LUST) – November 2001

In addition to the search, Duval County environmental agency staff provided information about other potential problems related to hazardous substances or petroleum products on or

near DU-3&4.

- **Site reconnaissance** – On April 8, 2002 Taylor Engineering staff (Lori Brownell and Tony Maguire) conducted a site reconnaissance to observe existing conditions on and near DU-3&4. The reconnaissance entailed a walk through the site to observe readily accessible areas. As is typical, this Phase I Assessment documents visual observations of on-site conditions; it does not entail chemical sampling or analyses.

- **Owner interview** – A correspondence interview (dated 4/12/02) with Mr. David Roach, FIND Executive Director, provided information about the recent use of DU-3&4.

1.3Limitations

A Phase I Environmental Site Assessment makes use of reasonably ascertainable information to identify recognized environmental conditions pertaining to hazardous substances or petroleum products at a given site. To the best of the authors' knowledge, this report contains factual information. Taylor Engineering, however, makes no representations regarding the accuracy of information obtained from other sources. Taylor Engineering limits its obligation and liabilities to fraudulent statements or gross negligence.

As is typical, this Phase I Environmental Site Assessment was a modest preliminary investigation of existing site conditions. Notably, a Phase I assessment can fail to uncover problems existing at a given location. This is especially true of underground conditions, which defy evaluation by surface observations. The absence of visual signs of contamination does not prove that the site is free of contamination nor does the presence of visual signs of contamination indicate that the site is extensively contaminated.

1.4Report Organization

Following this introduction, Chapter 2.0, *Site Description and Historical Use*, characterizes DU-3&4 based on information drawn from existing sources. This chapter also summarizes the results of the property owner or occupant interviews. Chapter 3.0, *Records Review*, summarizes information in selected federal and state databases about contaminated sites or facilities that handle hazardous substances or petroleum products located on or near DU-3&4. Chapter 4.0, *Site Reconnaissance*, reports observations of present site conditions noted during the site reconnaissance and the results of the property owner or occupant interviews. Chapter 5.0, *Findings and Conclusions*, contains a summary of the assessment and recommendations drawn from the results reported in Chapters 2.0 through 4.0. Chapter 6.0, *References*,

provides a list of resources used to prepare this report.

1.0 SITE DESCRIPTION AND HISTORICAL USE

This chapter describes the location of DU-3&4 and characterizes the site based on a review of readily available historical materials — property records, USGS quadrangle maps, soil surveys, and aerial photographs.

1.1 Location

Shown in Figure 2.1, the DU-3&4 dredged material management area comprises 60.03 acres located on Black Hammock Island in northeastern Duval County (Section 35; Township 1 North; Range 28 East). Black Hammock Island, partially separated from the mainland by Pumpkin Hill Creek and its associated salt marsh system, lies immediately west of the Atlantic Intracoastal Waterway (AIWW) between Nassau Sound to the north and Ft. George Inlet to the south. Conservation lands are located in the immediate vicinity of the site including Nassau River-St. Johns River Marshes State Aquatic Preserve, Timucuan National Ecological and Historic Preserve, Pumpkin Hill Creek State Buffer Preserve, and the City of Jacksonville's Cedar Point Park (Jue, et. al., 2001).

The property, located approximately 0.75 mile north of the Cedar Point Road and Sawpit Road intersection, lies immediately south of the Florida Inland Navigation's District 62.64-acre MSA 300E site. Identification of a 2.71-acre archeological site (State of Florida Division of Historic Resources Site 8DU7495) in the western portion of DU-3&4 resulted in a reconfiguration of DU-3&4's original site plan. The revised configuration, designed to meet the 50-year storage requirement of adjacent segments of the AIWW, extends over the eastern portion of DU-3&4 and the western portion of MSA 300E. The 60-ft wide pipeline easement for DU-3&4/MSA 300E containment basin, approximately 3,400 ft in length, extends from the AIWW to the eastern portion of MSA 300E. Although the containment facility will extend over both properties, this report focuses on the environmental condition, with respect to hazardous substances and petroleum products, of DU-3&4. A recent Masteller, Moler, & Reed, Inc. survey (Project 01-4910, boundary survey, 8/27/01), performed for the FIND, provides property boundaries and a legal description.

INSERT FIGURE 2.1 – LOCATION MAP

Ownership

Ownership records help provide insight about past uses of the property and potential sources of hazardous substances and petroleum products on the site. Duval County Property Appraiser records indicate that the FIND purchased DU-3&4 from Edwin A. and Francis A. Turner in July 1988. To date, the FIND has completed fencing activities related to the DU-3&4 dredged material management site construction.

2.3 General Physical Setting

Knowledge of the physical setting provides a framework for identifying potential sources of contamination and the distribution of contaminants should they appear likely on or near the site. This section describes the general physical setting — topography, drainage features, subsurface conditions, and soils — of DU-3&4. Unless otherwise noted, information in this section came from the reference material identified in Section 1.2.

The Mayport, FL USGS quadrangle map shows DU-3&4 as nearly level and generally draining westward toward the salt marshes associated with Pumpkin Hill Creek. Site elevations range slightly above +10 ft NGVD (National Geodetic Vertical Datum) on the east site portion to slightly below +1-ft NGVD along Pumpkin Hill Creek (WAR, 2001). Site vegetation consists of temperate hardwoods, live oak, pine flatwoods, coastal shrub, palmetto prairie, and mixed wetland hardwood (WAR, 2001).

The City of Jacksonville (Duval County) soil survey (Watts, 1998) shows predominant on-site soils consist of poorly drained Lynn Haven and Leon fine sand and somewhat poorly drained Ridgewood soils. The fine sands, consisting primarily of sandy marine sediments, occur within the coastal shrub community throughout the eastern portion of DU-3&4. The Ridgewood soils, consisting of rapidly permeable sandy marine sediments, occur along the western portion of DU-3&4 along the banks of Pumpkin Hill Creek.

A series of ancient marine terraces (Leve, 1966) provide the dominant physiographic features in the vicinity of DU-3&4. The Pamlico and Silver Bluff terraces, formed over time when the sea level reached different heights over extended periods, form a low coastal plain throughout most of the central and eastern portions of northeast Florida. Adjacent and parallel to the present coastline and AIWW, remnants of these terraces form a series of offshore bars or islands that tidal lagoons or streams separate from the mainland. Three distinct aquifers separated by two semi-confining units compose the groundwater flow system in northeast Duval County (Leve, 1966).

The upper most aquifer or the surficial aquifer consists of the sand and shell aquifers in the Pleistocene and Recent Deposits and the shell, limestone, and sand aquifers in the Pliocene or upper Miocene deposits. Limestone and sand aquifers in the clayey sand and sandy clay confining beds in the upper portion of the Hawthorn Formation underlie these relatively shallow layers. However, given the tidally influenced nature of the coastal island, the surficial aquifer at DU-3&4 likely lies above saline water.

1.4 Land Use

Aerial photographs may indicate whether past activities on or near the site could have introduced sources of contamination. In addition, present or past landowners may provide additional land-use information about any known problems related to hazardous substances or petroleum products.

1.4.1 Aerial Photography Review

The earliest aerial photograph, taken in 1943, shows the site and its surrounding area as undeveloped. The paved Cedar Point Road lies 0.75 mile south of the southern point of DU-3&4. Old Sawpit trail, an unimproved dirt road, extends northward from Cedar Point Road and runs adjacent to the site. A large stand of trees along the site's western border extends east approximately 400 ft. The remainder of the site consists of relatively sparse coastal shrub vegetation adjacent to Old Sawpit trail. An east-west trail, approximately 700 ft north of the DU-3&4 southern site boundary, traverses from Old Sawpit trail to Pumpkin Hill Creek.

The 1952 and 1960 aerial photographs show the site and surrounding area as undeveloped. The straight, paved Sawpit Road replaces the meandering Old Sawpit trail. Vegetation encroaches on the remaining portions of Old Sawpit trail. The small trail, shown bisecting the site in the 1943 aerial photographs, remains in use. A small canal southeast of the site leads east into the Timucuan National Preserve.

The 1968 and 1977 aerial photographs show little change within the immediate site. Two barren mounds appear approximately 500 ft and 1,300 ft north of the northern site boundary. Approximately 1,600 ft south of the southern site boundary, two unimproved roads extend from Sawpit Road to Pumpkin Hill Creek.

The 1988 aerial photograph shows MSA 300E, immediately north of DU-3&4, as a dredged material management area. The northern portion of MSA 300E, completely filled with sand, slopes to the flooded southern portion of the management area. A small area (100 ft x 200 ft) of disturbed vegetation, in

the northwest section of DU-3&4, occurs immediately south of the management area. A drainage canal extends from the northeastern corner of MSA 300E to the Timucuan National Preserve, west of the AIWW. Surrounding land use consists of low-density residential north of MSA 300E and undeveloped, vegetated lands east of the site. A cleared area, directly south of DU-3&4, contains numerous east-west oriented trenches. The trenches, approximately 700 ft in length, extend from Sawpit Road west to the vegetated buffer between Pumpkin Hill Creek.

The 1993 and 1995 aerial photographs show increased agriculturally related development in the surrounding area. The area containing the numerous trenches, noted in the 1988 photograph, appears related to agricultural activities. A tree nursery now lies directly north of this area and south of DU-3&4. A parcel of land opposite DU-3&4's southeastern corner, east of Sawpit Road, has been cleared of vegetation and developed into a residential or small commercial complex associated with the tree nursery. Small trails extend from MSA 300E into the northeastern corner of DU-3&4 and northwest to Pumpkin Hill Creek. DU-3&4 remains undeveloped with one primary access path through the central site interior. The previously described disturbed area in the northwest site corner contains emergent vegetation.

The 1998 and 2001 aerial photographs show increased residential development directly east of DU-3&4. A relatively large (1,000 ft x 1,300 ft) cleared area containing ranch style homes now occupies the previously densely vegetated area adjacent to the Timucuan National Preserve. Two small borrow areas, apparently associated with the tree nursery, lie directly south of DU-3&4. A small S-shaped canal, also within the tree nursery, extends west from Sawpit Road to Pumpkin Hill Creek.

The series of aerial photographs from 1943 to 2001 shows DU-3&4 has remained undeveloped and moderately vegetated. MSA 300E, directly north of DU-3&4, began operating as an active dredged material management area in 1982 (Taylor, 2002). Agriculturally related activities (i.e., tree nursery) and low-density residential dominate the land use directly south and east of DU-3&4. With the exception of the east-west central interior trail, the site has remained relatively undisturbed from the surrounding land use changes.

2.4.2 Property Owner Interview

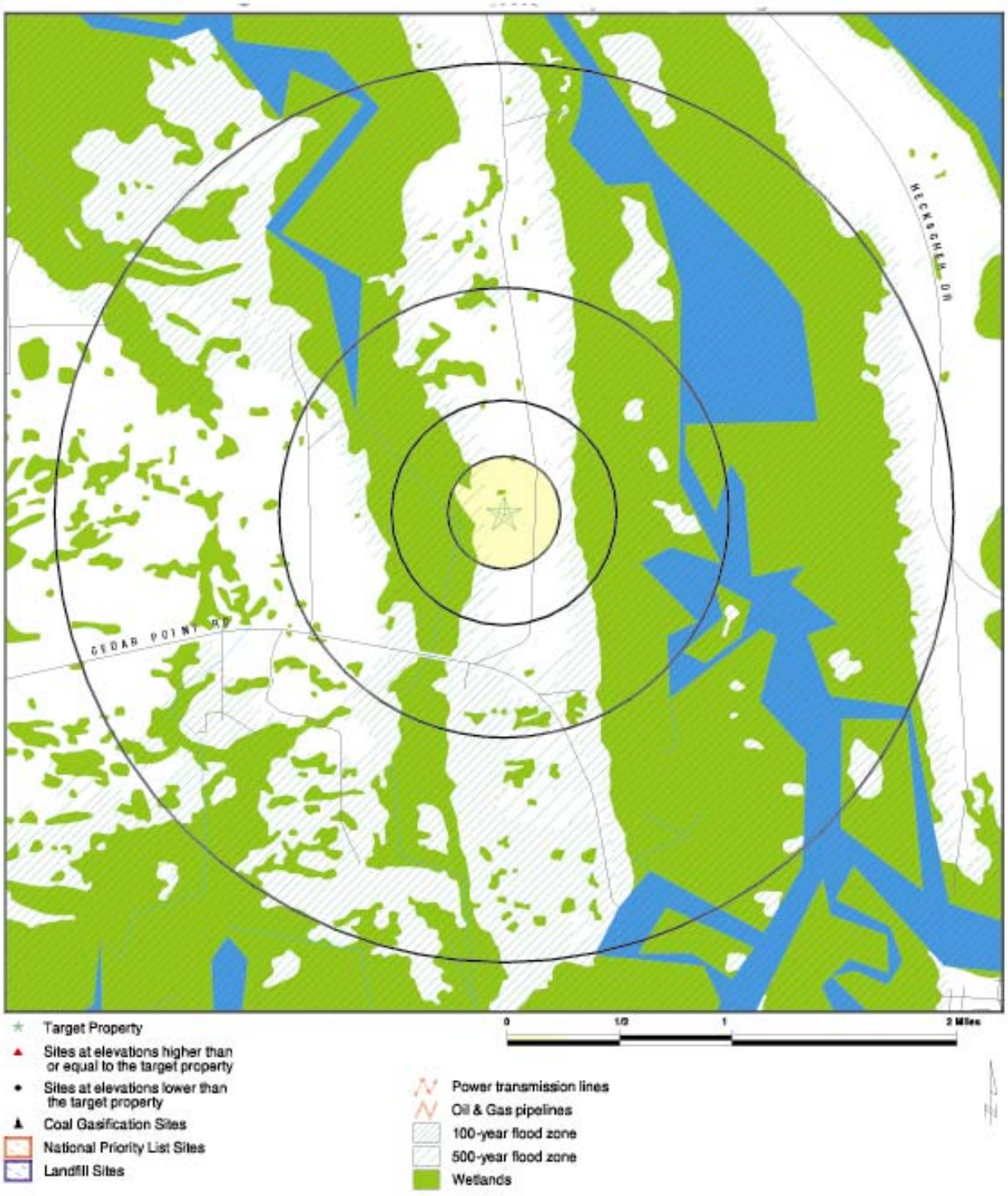
A correspondence interview (dated 4/12/02) with Mr. David Roach, the FIND Executive Director, indicated that the site has undergone fencing activities related to the construction of the dredged material management area. Mr. Roach also indicated that he was unaware of any hazardous substances or petroleum products on the property that may have resulted in environmental contamination. Appendix A contains the entire DU-3&4 owner interview questionnaire.

2.0 RECORDS REVIEW

Federal and state agencies maintain several databases with information about facilities with known or potential problems related to hazardous substances and petroleum products. EDR searched the databases identified in Section 1.2 to determine whether such facilities are present on or within one mile of DU-3&4. This chapter describes the results of that search as well as conversations with local environmental agency staff about the likelihood of hazardous substances or petroleum product problems on or near DU-3&4.

The records search, approximately centered on DU-3&4 (Figure 3.1 and Appendix B), encompassed a maximum one a half-mile radius, one half mile beyond the ASTM standard. The EDR report did not identify facilities in the ASTM standard environmental databases. However, the records search retrieved 15 records from unmappable locations in Duval County. Information is designated *unmappable* when incomplete or inaccurate information precludes precise mapping. Based on the authors' knowledge of the area, all 15 facilities are located at least one-half mile beyond the DU-3&4 site boundary.

On 5/6/02, Mr. Chuck Flowe, Hazardous Substances Branch Manager for the City of Jacksonville Air and Water Quality Division, said he did not know of any potential environmental problems on or near DU-3&4. Given the results of the records search and the personal correspondence with Mr. Flowe, no reported hazardous substances or petroleum products problems appear to affect DU-3&4.



Source: EDR Inquiry Number 747707.1s

TAYLOR ENGINEERING, INC. 9000 Cypress Green Drive, Suite 200 Jacksonville, FL 32256	Figure 3.1 Location of Facilities Identified in the Environmental Records Search	PROJECT C2001-060 REVISION SHEET April 2002

4.0 SITE RECONNAISSANCE

Taylor Engineering conducted a site reconnaissance to observe conditions on DU-3&4 and adjacent areas and to look for visual evidence of hazardous substances or petroleum products. The narrative that follows documents observations made during this reconnaissance. Figure 4.1 shows the approximate location of referenced features. Appendix C contains photographs taken during the site reconnaissance.

Two entrances along Sawpit Road provide access to the adjoining sites MSA 300E and DU-3&4. The northern entry, located approximately 1.2 miles north of the Cedar Point Road and Sawpit Road intersection, provides access to the western portion of MSA 300E (Photograph 1). MSA 300E, a former dredged material containment area, contains large deposits of barren white sand in the northern site portion. A freshwater marsh, containing a ring of emergent vegetation, occurs within the southern portion of the MSA 300E site. Household waste, an abundance of discarded appliances, and paintball debris litter the MSA 300E and DU 3&4 adjoining boundary (Photograph 2). A small, disturbed area (100 ft x 200 ft) of vegetation occupies the northwest portion of DU-3&4 along the southwest corner of the existing MSA 300E containment facility (Photograph 3). A missing section of fence (Photograph 4) along Sawpit Road, along the adjoining MSA 300E and DU-3&4 boundary, allows small off-road vehicular and pedestrian access. Tracks throughout the MSA 300E interior provide evidence of off-road vehicle use.

The southern entry, located approximately 0.75 mile north of the Cedar Point Road and Sawpit Road intersection, provides direct access to the central interior trail of DU-3&4 (Photograph 5). This east-west trail, extending approximately 1,400 ft from Sawpit Road to Pumpkin Hill Creek, contains scattered automobile parts, construction material (i.e., roofing debris, wood products), household appliances, and other household waste (Photograph 6). Most of the dumped materials, including two degraded drums, are located near the southern site entrance (Photograph 7). Toward the western side of DU-3&4, along the central trail, a car frame, tire, and other associated debris litter the side of the trail approximately 550 ft west of Sawpit Road (Photograph 8). An upright truck (Photograph 9) and associated vehicle debris litter an area approximately 600 ft further west on the central trail. Another vehicle part lay approximately 900 ft west of Sawpit Road off the central trail (Photograph 10).

Observations made during the site reconnaissance failed to indicate potential problems associated with hazardous substances or petroleum products within the DU-3&4 site boundaries.

INSERT FIGURE 4.1 — FEATURES OBSERVED ON SITE

5.0 FINDINGS AND CONCLUSIONS

5.1 Findings

Review of historic information and the site reconnaissance show that DU-3&4 has remained undeveloped with relatively moderate surrounding land use change since 1943. With the exception of the east-west central interior trail, DU-3&4 contains moderate vegetation including various coastal shrub, pine flatwood, and temperate hardwood communities. Agriculturally related activities (i.e., tree nursery) and low-density residential dominate the land use directly south and east of DU-3&4. The environmental records search did not identify any mapped federal or state facilities within one mile of DU-3&4.

5.2 Conclusions

The results of this Phase I Environmental Site Assessment did not identify recognized environmental conditions on DU-3&4. Since no reasonable basis exists to suspect the presence of hazardous substances or petroleum products on site a Phase II Environmental Site Assessment is not recommended at DU-3&4.

6.0 REFERENCES

Jue, S., C. Kindell, and J. Wojcik. 2001. *Florida Conservation Lands 2001*. Florida Natural Area Inventory, Tallahassee, FL.

Leve, G. W. 1966. *Ground Water in Duval and Nassau Counties, Florida.* United States Geological Survey.

Taylor, B. T., W. F. McFetridge, R. J. Wagner. 2002. *Management Plan; DU-3&4/MSA 300E; Dredged Material Management Areas; Duval County, Florida.* Taylor Engineering, Inc. Jacksonville, FL.

Water & Air Research, Inc. (WAR). 2001. *Environmental Site Documentation for Site DU-3&4/MSA 300E Proposed Dredged Material Management Areas in Duval County, Florida*. Water & Air Research, Inc. Gainesville, FL.

Watts, Frank C. 1998. *Soil Survey of City of Jacksonville, Duval County, Florida*. United States Department of Agriculture, Natural Resources Conservation Service.

APPENDIX A

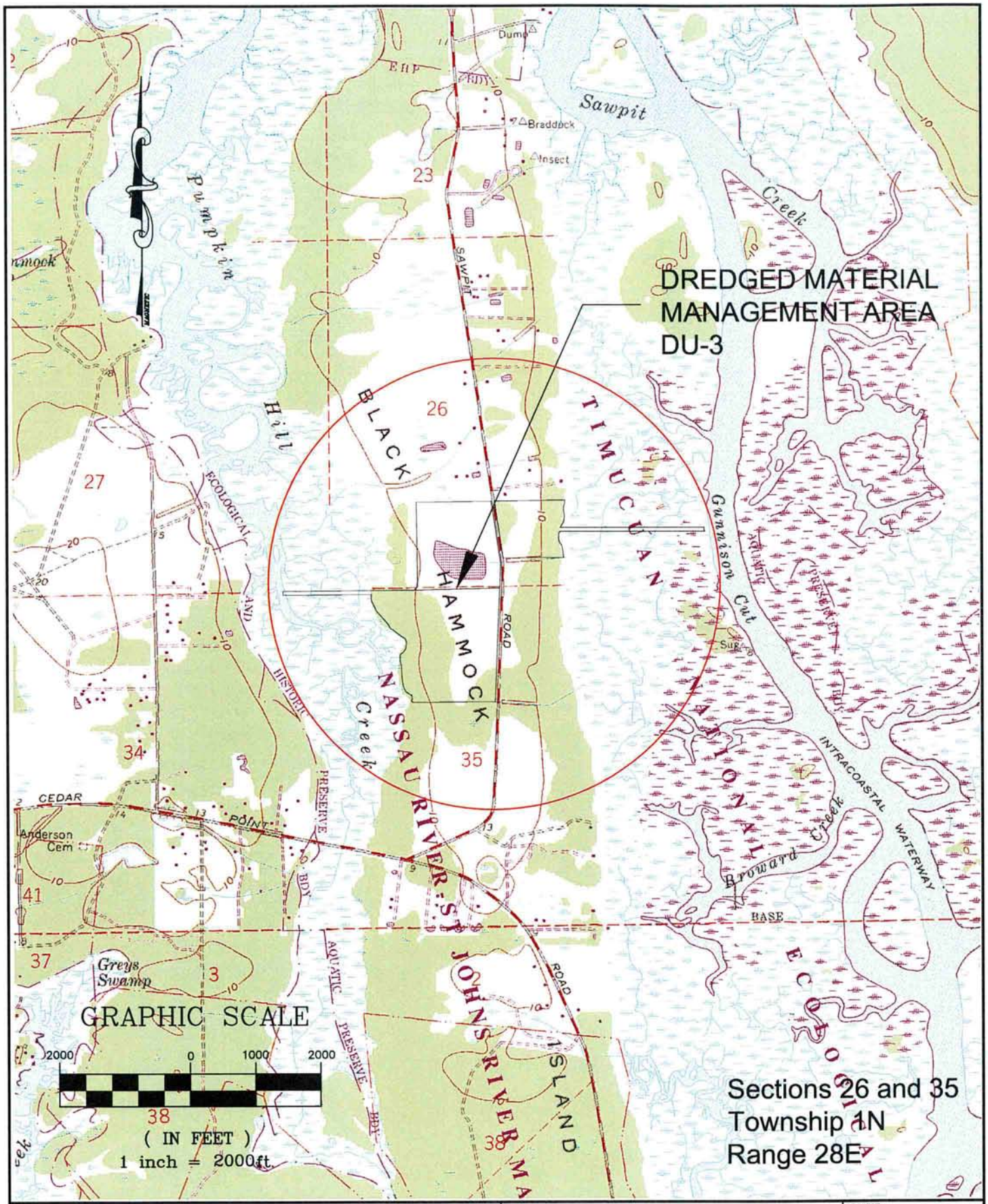
Owner Interview Questionnaire

APPENDIX B

Environmental Records Search Report

APPENDIX C

Site Reconnaissance Photographs



TAYLOR ENGINEERING INC.
9000 CYPRESS GREEN DRIVE, SUITE 200
JACKSONVILLE, FLORIDA 32256

FIGURE 1
Location Map
DMMA DU-3
Duval County, Florida

PROJECT	C2003-050-02
DRAWN BY	ERAFF
SHEET	
DATE	JUNE 2004